

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009721 A2

(51) International Patent Classification⁷: C09J 7/00

(21) International Application Number:
PCT/EP2003/007775

(22) International Filing Date: 17 July 2003 (17.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0216767.4 19 July 2002 (19.07.2002) GB
0222170.3 25 September 2002 (25.09.2002) GB

(71) Applicant (for all designated States except US): UCB, S.A.
[BE/BE]; Allée de la Recherche 60, B-1070 Brussels (BE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): MILLS, Peter
[GB/GB]; Station Road, Wigton, Cumbria CA7 9BG
(GB).

(74) Agent: KIRK, Martin; UCB, S.A., Allée de la Recherche,
60, B-1070 Brussels (BE).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COLOURED LABELS

(57) Abstract: There is described a coloured, transparent polymeric label which is capable of being fixed to a pre-selected coloured, transparent region of an article (optionally by a wet glue process) to achieve a non-label look on the article, characterised in that: the colour parameters measured in CIE colour space of each of the label, labelled article and un-labelled article together satisfy conditions (a) and/or (b) (a) (i) the modulus of ΔC is less than about 5, more preferably less than about 4, most preferably about 3.5, for example about zero, where: $\Delta C = C_{L+A} - C_A$ Equation 1 where $C_{L+A} = (a_{L+A}^2 + b_{L+A}^2)^{\frac{1}{2}}$ and $C_A = (a_A^2 + b_A^2)^{\frac{1}{2}}$; and (ii) the modulus of ΔL is less than about 7, preferably less than about 4, most preferably about 3, for example about zero, where: $\Delta L = L_{L+A} - L_A$ Equation 2; and (iii) the modulus of ΔE is less than about 10, more preferably less than about 6, most preferably about 4, for example about zero, where: $\Delta E = (\Delta a^2 + \Delta b^2 + \Delta L^2)^{\frac{1}{2}}$ Equation 3; where $\Delta a = a_{L+A} - a_L$ and $\Delta b = b_{L+A} - b_L$; and (iv) the modulus of ΔH is less than about 7, more preferably less than about 5.5, most preferably less than about 2.5, for example about zero, where: $\Delta H = (\Delta E^2 + \Delta L^2 + \Delta C^2)^{\frac{1}{2}}$ Equation 4 and/or (b) the modulus of transmitted colour ratio (R_{trans}) is greater than 0.9 preferably is substantially about 1.0, where $R_{trans} = 2 (E_{L+A}) / (E_L + E_A)$ Equation 5 This provides a method for colour matching a label to a specific article such as a bottle to be labelled to provide a nolabel appearance on the article.

ATTACHMENT D

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009721 A3

- (51) International Patent Classification⁷: C09J 7/00 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (21) International Application Number: PCT/EP2003/007775
- (22) International Filing Date: 17 July 2003 (17.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0216767.4 19 July 2002 (19.07.2002) GB
0222170.3 25 September 2002 (25.09.2002) GB
- (71) Applicant (*for all designated States except US*): UCB, S.A. [BE/BE]; Allée de la Recherche 60, B-1070 Brussels (BE).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): MILLS, Peter [GB/GB]; Station Road, Wigton, Cumbria CA7 9BG (GB).
- (74) Agent: KIRK, Martin; UCB, S.A., Allée de la Recherche, 60, B-1070 Brussels (BE).
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 18 March 2004

[Continued on next page]

(54) Title: COLOURED LABELS



(57) Abstract: There is described a coloured, transparent polymeric label which is capable of being fixed to a pre-selected coloured, transparent region of an article (optionally by a wet glue process) to achieve a non-label look on the article, characterised in that: the colour parameters measured in CIE colour space of each of the label, labelled article and un-labelled article together satisfy conditions (a) and/or (b) (a) (i) the modulus of ΔC is less than about 5, more preferably less than about 4, most preferably about 3.5, for example about zero, where: $\Delta C = C_{L+A} - C_A$ Equation 1 where $C_{L+A} = (a_{L+A}^2 + b_{L+A}^2)^{\frac{1}{2}}$ and $C_A = (a_A^2 + b_A^2)^{\frac{1}{2}}$; and (ii) the modulus of ΔL is less than about 7, preferably less than about 4, most preferably about 3, for example about zero, where: $\Delta L = L_{L+A} - L_A$ Equation 2; and (iii) the modulus of ΔE is less than about 10, more preferably less than about 6, most preferably about 4, for example about zero, where: $\Delta E = (\Delta a^2 + \Delta b^2 + \Delta L^2)^{\frac{1}{2}}$ Equation 3; where $\Delta a = a_{L+A} - a_L$ and $\Delta b = b_{L+A} - b_L$; and (iv) the modulus of ΔH is less than about 7, more preferably less than about 5.5, most preferably less than about 2.5, for example about zero, where: $\Delta H = (\Delta E^2 + \Delta L^2 + \Delta C^2)^{\frac{1}{2}}$ Equation 4 and/or (b) the modulus of transmitted colour ratio (R_{trans}) is greater than 0.9 preferably is substantially about 1.0, where $R_{trans} = 2 (E_{L+A}) / (E_L + E_A)$ Equation 5 This provides a method for colour matching a label to a specific article such as a bottle to be labelled to provide a nolabel appearance on the article.

WO 2004/009721 A3

BEST AVAILABLE COPY

WO 2004/009721 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/07775

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C09J7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C09J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 03 050785 A (PRINTPACK ILLINOIS INC) 19 June 2003 (2003-06-19) page 2, line 6 -page 4, line 37; claim 68 ----	1-10
P,X	WO 02 074874 A (FALETTI GIANPAOLO ;GAVEL THIERRY (BE); NASIB VELI (BE); UCB SA (BE) 26 September 2002 (2002-09-26) page 1, line 16 -page 2, line 5; claims 1,9; examples 1,2 ----	1-10
X	US 6 042 930 A (TUNG HARVEY C ET AL) 28 March 2000 (2000-03-28) column 3, line 10 - line 43 column 6, line 13 - line 30 ----	1-10
X	US 5 407 718 A (POPAT GHANSHYAM H ET AL) 18 April 1995 (1995-04-18) claims ----- -/--	1-10



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

7 November 2003

Date of mailing of the international search report

26/01/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Zeslawski, W

INTERNATIONAL SEARCH REPORT

In **Patent Application No**
PCT/EP 03/07775

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 584 451 A (LINTEC CO LTD) 2 March 1994 (1994-03-02) column 2, line 8 - column 3, line 11 column 5, line 5 - line 20 ---	1-10
X	US 6 306 242 B1 (DRONZEK PETER J) 23 October 2001 (2001-10-23) column 4, line 20 - line 35 column 6, line 26 - line 38; claims 6,7 ---	1
A	US 5 712 031 A (TUNG HARVEY C ET AL) 27 January 1998 (1998-01-27) column 3, line 16 - line 22; claims; examples -----	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Application No

PCT/EP 03/07775

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03050785	A	19-06-2003	US 2003102080 A1 WO 03050785 A2	05-06-2003 19-06-2003
WO 02074874	A	26-09-2002	WO 02074874 A1	26-09-2002
US 6042930	A	28-03-2000	NONE	
US 5407718	A	18-04-1995	AT 167327 T AU 691516 B2 AU 7482894 A CA 2168477 A1 CN 1145581 A DE 69411014 D1 DE 69411014 T2 EP 0713379 A1 ES 2120063 T3 JP 9501514 T KR 186681 B1 NZ 271245 A WO 9515738 A1	15-06-1998 21-05-1998 27-06-1995 15-06-1995 19-03-1997 16-07-1998 04-03-1999 29-05-1996 16-10-1998 10-02-1997 01-05-1999 24-11-1997 15-06-1995
EP 0584451	A	02-03-1994	JP 2916328 B2 JP 6073345 A JP 2681581 B2 JP 6102826 A AT 186068 T AU 655105 B2 AU 3555593 A DE 69326863 D1 DE 69326863 T2 EP 0584451 A1 KR 9614761 B1 KR 276111 B1 NZ 247073 A SG 44762 A1 US 5380572 A	05-07-1999 15-03-1994 26-11-1997 15-04-1994 15-11-1999 01-12-1994 03-03-1994 02-12-1999 20-04-2000 02-03-1994 19-10-1996 15-12-2000 22-12-1994 19-12-1997 10-01-1995
US 6306242	B1	23-10-2001	AU 9795298 A CA 2306463 A1 WO 9919412 A1 US 2001035265 A1	03-05-1999 22-04-1999 22-04-1999 01-11-2001
US 5712031	A	27-01-1998	NONE	